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REPORT
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# HIGH-PERFORMANCE GREEN BUILDINGS ACT OF 2007

DECEMBER 12, 2007.—Ordered to be printed

Mrs. BOXER, from the Committee on Environment and Public Works, submitted the following

# R E P O R T

[To accompany S. 506]

[Including cost estimate of the Congressional Budget Office]

The Committee on Environment and Public Works, to which was referred the bill (S. 506) to improve efficiency in the Federal Government through the use of high-performance green buildings, and for other purposes, having considered the same reports favorably thereon with an amendment and recommends that the bill, as amended, do pass.

## GENERAL STATEMENT AND BACKGROUND

### *Background on high-performance Green Buildings legislation*

The Environment and Public Works Committee adopted bipartisan Green Buildings legislation, S. 3591, by voice vote in the 109th Congress in November 2006. That bill was never considered by the full Senate. In the 110th Congress, Senator Lautenberg and a bipartisan group of cosponsors introduced a slightly modified version of last year's bill (S. 506), as did Senator Warner (S. 489). A major difference between the Lautenberg and Warner bills was that the Lautenberg bill uses Leadership in Energy and Environmental Design (LEED) as the basis for defining green buildings, while the Warner bill did not—leaving it up to GSA to determine a standard. GSA currently uses LEED as its green building standard.

After extensive discussions, a Lautenberg-Warner-Boxer substitute amendment was developed based primarily upon S. 506, but which incorporates certain aspects of the S. 489 and other changes.

The substitute amendment was adopted by the Committee. It makes four significant amendments:

1. The bill encourages the government to build and upgrade to green buildings; the amendment provides that specific references to LEED as the standard for green buildings (in §§ 102 and 401) are replaced by a requirement for GSA to determine every 2 years what the best green building certification standard is, based upon criteria in the revised bill.

2. The bill provides for guidelines for siting green schools (§ 203), and for school environmental health (§ 205); the amendment clarifies that these guidelines are voluntary, not regulatory requirements.

3. The criteria for guidelines for siting schools are amended to require consideration of efficient use of energy as well as environmental and other factors.

4. A findings and purposes section has been added.

*Summary of legislation*

S. 506 as modified by the substitute amendment directs the Administrator of General Services to establish an Office of High-Performance Green Buildings, and to appoint a Director. The Office must establish a Green Building Advisory Committee; do public outreach on green buildings; develop and recommend a high-performance green building research plan; develop and implement a comprehensive indoor air quality program for federal facilities; analyze current budget and contracting practices that affect achievement of high-performance green buildings; and identify issues that inhibit federal facilities from becoming green buildings as measured by the GSA-selected rating standard.

The bill defines a "high-performance green building" as one that, during its life-cycle, reduces energy, water, material resource use and the generation of waste and improves indoor environmental and air quality. High-performance green buildings also are intended to improve impacts of the building on human health and the environment, increase the use of environmentally preferable products, increase reuse and recycling opportunities, and integrate systems in the building.

The legislation requires the Director to identify incentives to encourage the use of green buildings. It also authorizes the Administrator of the Environmental Protection Agency (EPA) to provide grants to state agencies for use in providing technical assistance for EPA's programs (including the Tools for Schools Program and the Healthy School Environmental Assessment Tool) to schools for use in addressing environmental issues, and in developing state school environmental quality plans.

The bill also requires the EPA to develop school site acquisition guidelines that account for the special vulnerability of children to hazardous substances or pollution exposure where the potential for site contamination exists. The guidelines also are to account for available modes of transportation and the potential use of the school as an emergency shelter. The Director is to ensure that a public clearinghouse makes available information on the exposure of children to environmental hazards in school facilities.

EPA is also required to issue guidelines for states in developing and implementing an environmental health program for schools.

In addition, the Director of the Office of Federal Procurement Policy (OFPP) is required to revise applicable acquisition regulations to require federal facility acquisition, construction, or renovation to optimize energy performance, conserve water, enhance indoor environmental quality, and reduce environmental impacts of materials and waste flows. The OFPP also is to issue guidance to federal procurement executives on renegotiating proposed facilities design, existing facilities renovations, and eased facilities improvements.

*Background on development of Green Buildings legislation and administrative actions*

The Green Buildings legislation has a rich history in the Environment and Public Works Committee, and considers and builds upon developments in the Executive Branch. On April 24, 2002, the Senate Committee on Environment and Public Works hosted a roundtable that involved all relevant Federal agencies, State and local green building officials, the U.S. Green Building Council, universities, and environmental building experts, including designers and architects. The purpose of the roundtable was to begin a dialogue between the Congress and green building interests. The findings and recommendations that came out of the roundtable were summarized in a report entitled, "Building Momentum: National Trends and Prospects for High-Performance Green Buildings."

In addition, the Environment and Public Works Committee conducted a hearing on October 1, 2002, to assess green school initiatives: environmental standards for schools, school siting in relation to toxic waste sites, and "green" building codes. The Committee reviewed activities undertaken by the EPA's Office of Children's Environmental Health, the Office of Indoor Air Quality, and the Department of Energy concerning environmental and energy issues relevant to school properties.

In September 2003, the White House Office of the Federal Environmental Executive published a report entitled, "The Federal Commitment to Green Building: Experiences and Expectations," that included a list of recommendations to improve the Federal effort on green building activities. These recommendations included better coordination of all green building activities, better guidance and direction for Federal agencies, a need for research on the benefits of green buildings, and the development of green building tools. Soon after, the Federal Green Building Council, whose members include senior officials of many Federal agencies, including GSA, EPA, DOE, DOD and ten others, was established in 2003 to guide policy development and research on green building initiatives within each Federal agency.

Federal green practices for buildings and operations have been started through various directives, such as Executive Order 13123, "Greening the Government Through Efficient Energy Management" (June 1999) and Executive Order 13101, "Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition" (September 1998). Those two orders were modified, consolidated, and revoked by Executive Order 13423 (January 2007), which extended the previous Executive Orders' directives to use certain green building practices.

For example, Executive Order 13423 provides goals that each agency is to "improve energy efficiency and reduce greenhouse gas emissions of the agency" by specified percentages, and are to require "use of sustainable environmental practices, including acquisition of bio-based, environmentally preferable, energy-efficient, water-efficient, and recycled-content products." In addition, this Executive Order provides that agencies are to "ensure that (i) new construction and major renovation of agency buildings comply with the Guiding Principles for Federal Leadership in High-Performance and Sustainable Buildings set forth in the Federal Leadership in High-Performance and Sustainable Buildings Memorandum of Understanding (2006), and (ii) 15 percent of the existing Federal capital asset building inventory of the agency as of the end of fiscal year 2015 incorporates the sustainable practices in the Guiding Principles."

The Interagency Sustainability Working Group (ISWG) was established in 2001 in response to Executive Order 13123, and was designed as a forum for the exchange of information on sustainable design activities within the Federal government.

In 2006, as referred to in Executive Order 13423, the White House Summit on Federal Sustainable Buildings resulted in the signing of a Memorandum of Understanding (MOU) for Federal Leadership in High-Performance and Sustainable Buildings between the Office of the Federal Environmental Executive (OFEE) and 19 Federal agencies. In July of 2006, as noted in the bill's findings, a report commissioned by GSA concluded that the Leadership in Energy and Environmental Design standard was "the dominant system in the United States market."

With regard to school environments, the President's Task Force on Environmental Health Risks and Safety Risks to Children was created in 1998 under Executive Order 13045 (April 21, 1997) to coordinate and promote children's environmental health issues across the Federal government. The task force addressed a number of important environmental school issues, including asthma, lead-based paint, childhood cancers, and unintentional injuries. In 2001, the task force created a schools workgroup, which developed a Federal inventory of school environmental health programs and activities and supported the development of a government-wide web portal on school environmental health issues. The task force expired in 2005. In early 2005, OFEE convened an interagency task force to address promoting environmental and energy stewardship in schools by having agencies share their case studies and best practices with the educational community. This group was merged with the Education Initiative Team under the Cooperative Conservation Executive Order 13352 Task Force.

In the 108th Congress, Senator Jeffords introduced S. 2620, the High-Performance Green Buildings Act of 2004, based upon the recommendations and findings of both reports mentioned above. No Committee action was taken on S. 2620.

In the 109th Congress, Senator Jeffords reintroduced his original Green Building legislation, slightly modified, as S. 3591, the High-Performance Green Buildings Act of 2006, which was amended and adopted the Committee on Environment and Public Works, but not taken up by the Senate. In the 110th Congress, Senator Lauten-

berg introduced S. 506, and Senator Warner introduced S. 489, both modified versions of S. 3591 from the 109th Congress.

## OBJECTIVES OF THE LEGISLATION

As outlined in Section 2 of S. 506, Findings and Purposes of the bill, the legislation is intended to encourage the Federal Government to act as an example for State and local governments, the private sector, and individuals by building high-performance green buildings that reduce energy use and environmental impacts. The bill establishes an office within the General Services Administration, and a Green Building Advisory Committee, to advance the goals of conducting research and development and public outreach, and to move the Federal Government toward construction of high-performance green buildings

The legislation also is intended to encourage States, local governments, and school systems to site, build, renovate, and operate high-performance green schools through the adoption of voluntary guidelines for those schools, the dissemination of grants, and the adoption of environmental health plans and programs.

Another goal of the legislation is to strengthen Federal leadership on high-performance green buildings through the adoption of incentives for high-performance green buildings, and improved green procurement by Federal agencies to demonstrate that high-performance green buildings can and do provide significant benefits, in order to encourage wider adoption of green building practices, through the adoption of demonstration projects.

## SECTION-BY-SECTION ANALYSIS

*Section 1. Short title*

This section provides that this Act may be cited as the "High-Performance Green Buildings Act of 2007."

*Section 2. Findings and purposes*

This section outlines the major findings that led the Committee to adopt the legislation. It also enunciates the key goals of the bill.

*Section 3. Definitions*

This section defines the terms "Administrator," "Committee," "Director," "Federal Facility," "High-Performance Green Building," "Life-Cycle," "Life-Cycle Assessment," "Life-Cycle Costing," and "Office."

## TITLE I—OFFICE OF HIGH-PERFORMANCE GREEN BUILDINGS

*Section 101. Oversight*

This section establishes and appoints a Senior Executive Service (SES) career individual to serve as Director for the Office of High-Performance Green Buildings and provides compensation.

Subsection (a) establishes the Director position and appoints a career SES individual to manage the office in accordance with section 102.

Subsection (b) provides compensation for the Director at a maximum rate of basic pay for a Senior Executive Service under section 5382 of title 5, U.S. Code.

*Section 102. Office of High-Performance Green Buildings*

This section establishes an office within the General Services Administration as the Office of High-Performance Green Buildings and outlines the duties of the Director of the Office.

Subsection (a) establishes the Office of High-Performance Green Buildings within the General Services Administration.

Subsection (b) outlines the duties of the Director to include: (1) ensuring full coordination of all green building activities within the General Services Administration and all relevant Federal agencies that at a minimum include: the Environmental Protection Agency, the Office of the Federal Environmental Executive, Department of Energy, Office of the Federal Procurement Policy, Department of Health and Human Services, and the Department of Defense; (2) establishing a senior-level green building advisory committee to provide advice and recommendations to the Director; (3) identifying and biennially reassessing improved or higher rating standards; (4) establishing a high-performance green building clearinghouse; (5) ensuring full coordination of research and development information; (6) identifying and developing green building standards; (7) establishing green building practices for Federal facilities; (8) reviewing and analyzing Federal budget practices relating to green buildings; and (9) providing a report to Congress.

Subsection (c) requires that a report be submitted to Congress within 2 years of enactment and biennially thereafter that includes: (1) a description of green building initiatives under this act and other programs in effect prior to this Act along with the current status of each and funding levels; (2) identification of barriers within the planning, budgeting and construction process that prevent new and existing facilities from becoming high-performance green buildings as measured by the standard established under subsection (d); (3) identification of inconsistencies within current law; (4) recommendations of language for uniform standards for all Federal agencies; (5) a review of the budget process for alternatives to address energy and environmental cost accounting and include benefits to health and productivity, permitting Federal agencies to retain savings accrued through life-cycle costing, and identifying short and long term savings from high-performance green building initiatives, including those related to health and productivity; (6) identification of green self-sustaining technologies to address operational needs of Federal facilities in times of national security emergencies, natural disasters, or other dire emergencies; (7) a summary of developments at the State and local levels; and (8) recommendations to address these issues.

A variety of green building rating systems are currently available for use by the U.S. building industry. While the Findings and Purposes section specifically references the United States Green Building Council's Leadership in Energy and Environmental Design (LEED) and the Green Globes rating system from the Green Building Initiative (GBI), and while as noted in that section GSA currently uses the LEED standard, the Committee intends that other rating systems be reviewed under this bill to determine the best standard for high-performance green buildings. Both LEED and Green Globes have U.S.-specific versions; examples of other ratings tools include (but are not limited to) the Building Research Establishment's Environmental Assessment Method (BREEAM), the

Comprehensive Assessment System for Building Environmental Efficiency (CASBEE), and GBTool. The Committee intends that the Office of High-Performance Green Buildings evaluate all credible green building rating systems biennially as they develop, to determine how they apply to help new and existing facilities become high-performance green buildings, and which standard best achieves the purposes of the Act, using the criteria in subsection (d).

Subsection (d) requires that the Director must identify a standard that the Director determines to be the most likely to encourage a comprehensive and environmentally-sound approach to certification of green buildings not later than 60 days after the date of enactment of this Act, and that the Director review that determination every two years thereafter. This standard is to be based on: (1) a required biennial study, to be carried out by the Director, that compares and evaluate high performance green building standards; (2) the ability and availability of assessors and auditors to independently verify the criteria and measurement of metrics at the scale necessary to implement this Act; (3) the ability of the applicable standard-setting organization to collect and reflect public comment; (4) the ability of the standard to be developed and revised through a consensus-based process; (5) an evaluation of the adequacy of the standard, which shall give credit for the efficient and sustainable use of water, energy, and other natural resources, use of renewable energy sources, improved indoor environmental quality through enhanced indoor air quality, thermal comfort, acoustics, day lighting, pollutant source control, and use of low-emission materials and building system controls and such other criteria as the Director determines to be appropriate; and (6) national recognition within the building industry. The Director is required by subsection (d) to conduct a biennial review of the standard and to include the results of each biennial review in the report required to be submitted under subsection (c).

Subsection (e) requires that the Office carry out a plan for implementing these initiatives.

*Section 103. Green Building Advisory Committee*

This section establishes a Green Building Advisory Committee of both Federal and non-Federal entities, sets specific parameters on the membership, and requires that the Director set a regular schedule of meetings. This section explains the role of the Committee and provides an exemption to section 14 of the Federal Advisory Committee Act.

Subsection (a) establishes that no later than 180 days after enactment, the Director shall create the Green Building Advisory Committee.

Subsection (b) outlines the membership of the Committee to include all relevant Federal agencies and at least one representative of each of the following: state and local government green building programs, independent green building associations or councils, building experts, security advisors, and environmental health experts, including those with experience in children's health. The Committee may not have more than 15 non-Federal members.

Subsection (c) requires that a regular schedule of meetings be set. The Committee recommends that the Green Building Advisory

Committee meet as often as 6 times each year, if deemed necessary by the Director in consultation with other members of the Advisory Committee, but realizes that a physical meeting may not always be necessary.

Subsection (d) explains that the role of the Committee is to provide advice and expertise to the Director for carrying out his duties under this Act.

Subsection (e) exempts the Committee from section 14 of the Federal Advisory Committee Act that dissolves committees after 2 years.

*Section 104. Public outreach*

This section requires the Director to carry out public outreach to inform individuals and entities of green building activities government-wide through the creation of a national high-performance green building clearinghouse that identifies similar green building activities and provides direct links to each Federal agency's green building activities, as well as major developments, findings or studies at the State and local level, the private sector, and other relevant organizations, including those of other countries. The clearinghouse shall also provide access to technical information, including tools and resources helpful for making decisions that are more cost-effective, energy-efficient, health-protective and environmentally beneficial, and that would be useful for constructing a high-performance green building, as well as information on how to certify a green building.

*Section 105. Research and development*

This section requires the Director to coordinate ongoing green building activities, to survey recent findings and developments, and to develop a research plan on high-performance green buildings. The research shall involve the relationship between human health, occupant productivity and each of the following: emissions from materials and products in the building, natural day lighting, ventilation choices and technologies, heating and cooling systems, moisture control and mold, maintenance and cleaning, pest control, and other issues relating to health, comfort, productivity, and performance of the occupants of the building.

The research plan shall also include the development and dissemination of tools to measure the life-cycle performance of a building, a review of the benefits of using high-performance green buildings during a natural disaster or national emergency, as well as other areas the Director deems necessary.

Subsection (b) requires the Director, in consultation with the Green Building Advisory Committee, to develop and carry out a comprehensive indoor air quality program for all Federal facilities to ensure the safety of Federal workers and facility occupants during new construction and renovation of facilities, and in existing facilities. The Committee intends that the Director's program be developed in close cooperation with the EPA indoor air quality program. The Committee is aware that as green buildings' envelopes are tightened to increase their energy efficiency, building materials containing toxins such as known carcinogens could pose potentially greater risks to occupants than is the case in older, less tight structures. At the same time, a host of new, innovative building mate-

rials that are healthier than ordinary materials from an indoor air quality perspective are reaching the market. From building insulation using water-based binders to zero emission paints, GSA has the opportunity to improve indoor air quality in new buildings while at the same time enhancing energy efficiency. Thus, the Committee intends that the Federal government should be a leader in the adoption of technologies that promote healthier buildings and directs that, whenever possible, GSA employ building materials free of toxins and known human carcinogens in the construction of Federal high-performance green buildings.

*Section 106. Budget and life-cycle costing and contracting*

This section requires the Director to identify, review, and analyze current budget and contracting practices for building a high-performance green building, to develop guidance and conduct training sessions on life-cycle costing, to identify tools to aid in life-cycle cost decision making, and to explore the feasibility for including the benefits of green buildings, such as security benefits, into life-cycle cost decision making.

*Section 107. Authorization of appropriations*

This section authorizes $4,000,000 for each of fiscal years 2008 through 2012, to remain available until expended.

TITLE II—HEALTHY HIGH-PERFORMANCE SCHOOLS

*Section 201. Definition of high-performance school*

This section defines a healthy high-performing school.

*Section 202. Grants for healthy school environments*

This section authorizes the Administrator of EPA, in consultation with the Secretary of Education, to provide grants to qualified State agencies to provide technical assistance in implementing EPA school environmental programs such as the Tools for Schools Program and the Healthy School Environmental Assessment Tool. The grant money may also be used to develop State school environmental quality plans that include standards for school building design, construction and renovation that would achieve a healthy high-performing school and plans that would identify ongoing environmental problems in the school and include recommendations on how to address these problems that would also include an assessment of information on the exposure of children to environmental hazards in school facilities.

The Committee intends that such grants may also be made available to tribes.

*Section 203. Model guidelines for siting of school facilities*

This section directs the Administrator of EPA, in consultation with the Secretaries of Education and Health and Human Services to develop voluntary school site selection guidelines that take into account the special vulnerability of children to hazardous substances or pollution exposures in any case where possible contamination would exist, modes of transportation available to students and staff, the efficient use of energy, and the potential use of the

school facility as an emergency shelter in the event of a natural disaster or other national emergency.

*Section 204. Public outreach*

This section requires the EPA Administrator to report to the Director on all activities carried out under this Title. The Director is required to make this information available on the clearinghouse established in section 104 to the maximum extent practicable, in particular, information on the exposure of children to environmental hazards in school facilities.

*Section 205. Environmental health program*

This section requires the Administrator of EPA to issue voluntary guidelines for use by the states in developing and implementing environmental health programs for schools.

Subsection (a) requires the EPA Administrator, in consultation with the Secretary of Education, the Secretary of Health and Human Services, and other relevant agencies, to issue these guidelines for use by the State in developing and implementing an environmental health program for schools. The guidelines are to take into account the findings of the research initiatives under the act and other relevant federal laws, including updates on trends in the field such as the impact of school facility environments on student and staff health, safety, and productivity, and disabilities or special needs. The guidelines are to provide research using relevant tools noted under section 105(a) to quantify the relationships between human health, occupant productivity, and student performance. The guidelines also are to take into account pollutant emissions from materials and products, natural day lighting, ventilation choices and technologies, as well as heating and cooling choices and technologies. In addition, they are to evaluate moisture control and mold, maintenance, cleaning, and pest control activities, acoustics, and other issues relating to the health, comfort, productivity, and performance of occupants of the school facilities.

The guidelines also are to provide technical assistance on siting, design, management, and operation of school facilities, including facilities used by students with disabilities or special needs. EPA's guidelines must collaborate with federally funded pediatric environmental health centers to assist in on-site school environmental investigations assists States and the public in better understanding and improving the environmental health of children, and provides to the Office a biennial report of all activities carried out under this title, which the Director shall include in the report described in section 102(c).

Subsection (b) requires the Director to ensure, to the maximum extent practicable, that the public clearinghouse established under section 104 receives and makes available information from EPA that is contained in the report described in subsection (a)(6). The clearinghouse also is to include information on the exposure of children to environmental hazards in school facilities, as provided by EPA.

*Section 206. Authorization of appropriations*

This section authorizes $10,000,000 for the period of fiscal years 2008 through 2012, to remain available until expended.

TITLE III—STRENGTHENING FEDERAL LEADERSHIP

*Section 301. Incentives*

This section requires that the Director identify incentives to encourage the use of green buildings and related technologies in the operations of the Federal Government that would include recognition awards and the ability of an agency to keep any financial savings they accrue by utilizing green building initiatives.

*Section 302. Federal procurement*

This section requires that regulations be issued requiring that to the maximum extent practicable, all Federal building projects for new construction, major repair and renovation be sustainable and that leases be in facilities that are both energy efficient and constructed or repaired with high-performing and sustainable design. In addition, guidance shall also be issued to aid in the redesign of proposed facilities.

Subsection (a) directs the Director of the Office of Federal Procurement Policy, in consultation with the Director of the Office of High-Performance Green Buildings and the Under Secretary of Defense for Acquisition, Technology and Logistics, within two years of enactment, to revise applicable regulations directing Federal procurement executives to apply, to the maximum extent practicable, the key principles of the Memorandum of Understanding signed by 19 Federal agencies in January of 2006 to every Federal project for new construction, major repair and renovation. These principles of integrated design, optimizing building and systems energy performance, protecting and conserving water, enhancing indoor environmental quality, and reducing environmental impacts of materials and waste flows will assist the Federal government in utilizing more high-performing green buildings.

The regulations shall also be revised to give preference, to the maximum extent practicable, to the leasing of facilities that are energy efficient and have applied high-performance and sustainable design principles during construction and renovation.

Subsection (b) requires that 90 days after the regulations have been revised, guidance be issued by the Director of the Office of Federal Procurement Policy providing direction and the option to renegotiate the design of proposed facilities to incorporate improvements consistent with this section.

*Section 303. Federal Green Building performance*

This section requires that a General Accountability Office (GAO) report be issued on the implementation of this Act and its initiatives and provides for specific requirements of the report. In addition, authorization is given for the Director to enhance and expand the existing scorecard system currently used to rate agency performance in green initiatives.

Subsection (a) requires that by October 31 of each of the two fiscal years following the fiscal year of enactment, and thereafter as the Comptroller General of the United States determines is appropriate, GAO shall conduct an audit on the implementation of this Act and submit a report on its findings to the Office, the Committee, the Administrator and Congress.

Subsection (b) outlines that the report shall include an assessment of budget, life-cycle costing and contracting issues, the level of coordination among the Office, OMB and relevant agencies, the performance of the Office in carrying out the implementation plan, the design stage of high-performance green building measures and findings associated with high-performance green building data that has been collected and reported to the office, as well as other issues the Comptroller deems appropriate.

Subsection (c) requires that the Director consult with the Advisory Committee on how best to enhance and implement the existing Environmental Stewardship Scorecard system to measure the performance of each Federal agency in implementing sustainable design and green building initiatives.

*Section 304. Stormwater runoff requirements for Federal development projects*

This section, added during the Committee markup as an amendment offered by Senator Cardin that was technically corrected by an amendment offered by Senator Inhofe, requires that the sponsor of any development or redevelopment project involving a federal facility with a footprint of greater than 5,000 square feet shall use planning, design, construction, and maintenance strategies that maintain, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to temperature, rate, volume, and duration of water flow.

TITLE IV—DEMONSTRATION PROJECT

*Section 401. Coordination of goals*

This section establishes guidelines for implementing three federal demonstration projects to contribute to the research and goals of the Office.

Subsection (a) authorizes the Director to establish a demonstration project.

Subsection (b) provides for three demonstration projects of green building initiatives covered under the Act and requires that the facility achieve the highest available rating under the standard identified pursuant to section 102(d).

Subsection (c) outlines the criteria of the Federal demonstration project to ensure that the project be an appropriate model on the effectiveness of high-performing green building technologies, to provide an analysis of materials, components and systems used in the building on occupant health and productivity, to analyze life-cycle costing and life-cycle assessment of materials and systems, to provide a location and design that promotes access to the facility through walking, hiking, and mass transit, and that possesses sufficient technological and organizational adaptability.

Subsection (d) requires that a report be provided to the Administrator one year after enactment, and annually thereafter through September 30, 2013, on the current status and findings of the demonstration project.

*Section 402. Authorization of appropriations*

This section authorizes $10,000,000 for the period of fiscal years 2008–2012, to remain available until expended.

## LEGISLATIVE HISTORY

S. 506 was introduced on February 6, 2007 by Senator Lautenberg, with Senators Snowe and Boxer as original cosponsors. Additional cosponsors include Senators Clinton, Lieberman, Sanders, Cardin, Menendez, Kerry, Klobuchar, Whitehouse, Feinstein, Lugar, and Dodd. S. 506 was referred to the Committee on Environment and Public Works, and was ordered reported favorably out of the Committee with a Lautenberg-Warner-Boxer amendment in the nature of a substitute and other amendments on June 6, 2007.

In the 109th Congress, a similar bill, S. 3591, was introduced by Senator Jeffords on June 28, 2006, with Ms. Snowe, Mr. Lautenberg, Mr. Chafee, Mrs. Boxer, Mrs. Feinstein, Mrs. Clinton, Mr. Lieberman, and Mr. Obama as original cosponsors. Additional cosponsors included Mr. Wyden, Mr. Menendez, and Mr. Bingaman. S. 3591 was referred to the Committee on Environment and Public Works and ordered reported favorably out of Committee with an amendment in the nature of a substitute on September 13, 2006. It was not considered by the full Senate.

In the 108th Congress, a similar bill, S. 2620, was introduced by Senator Jeffords and referred to the Committee on Environment and Public Works.

## HEARINGS

On May 15, 2007, the Environment and Public Works Committee held a hearing entitled, "Green Buildings: Benefits to Health, the Environment, and the Bottom Line." Testifying at the hearing were Robert F. Fox, of Fox and Cook, Architects; Peter Templeton, Vice President of Education and Research, U.S. Green Building Council; Claire Barnett, Executive Director, Healthy Schools Network; Ray Tonjes, Chairman of the National Association of Home Builders Green Building Subcommittee, and of Ray Tonjes Builder, Inc.; and Ward Hubbell, President, Green Building initiative.

A public hearing was held by the Senate Committee on Environment and Public Works on October 1, 2002, entitled, "Green Schools: Environmental Standards for Schools."

## ROLLCALL VOTES

The High Performance Green Buildings Act of 2007 (S. 506, Lautenberg-Warner-Boxer substitute amendment) passed by roll call vote on June 6, 2007, 14–4 (For: Alexander, Baucus, Bond, Cardin, Carper, Clinton, Klobuchar, Lautenberg, Lieberman, Sanders, Voinovich, Warner, Whitehouse, and Boxer. Against: Craig, Inhofe, Isakson, and Vitter). The Cardin-Klobuchar-Whitehouse Amendment (regarding runoff control) passed by voice vote, perfected by an Inhofe second degree technical amendment, which also passed by voice vote. The Inhofe-Vitter-Craig Amendment (allowing GSA to select multiple green building rating systems instead of one standard) was defeated 7–11 (For: Alexander, Bond, Craig, Inhofe, Isakson, Vitter, and Voinovich. Against: Baucus, Cardin, Carper, Clinton, Klobuchar, Lautenberg, Lieberman, Sanders, Warner, Whitehouse, Boxer).

REGULATORY IMPACT STATEMENT

In compliance with section 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee makes evaluation of the regulatory impact of the reported bill.

The bill does not create any additional regulatory burdens, nor will it cause any adverse impact on the personal privacy of individuals.

MANDATES ASSESSMENT

In compliance with the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4), the Committee finds that S. 506 would impose no Federal intergovernmental unfunded mandates on State, local, or tribal governments.

CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

Summary: S. 506 would authorize the appropriation of $40 million over the 2008–2012 period to make federal buildings more energy efficient, develop technologies that minimize adverse effects on the natural environment through structures known as "green buildings," and provide environmental grants to schools. Assuming appropriation of the authorized amounts, CBO estimates that implementing S. 506 would cost $7 million in 2008 and $39 million over the 2008–2012 period. Enacting the bill would not affect direct spending or revenues.

S. 506 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA). The bill would benefit state and local governments, and any costs they might incur would result from complying with conditions of federal assistance.

Estimated cost to the Federal Government: The estimated budgetary impact of S. 506 is shown in the following table. The costs of this legislation fall within budget functions 300 (natural resources and environment) and 800 (general government).

| | By fiscal year, in millions of dollars— | | | | |
|---|---|---|---|---|---|
| | 2008 | 2009 | 2010 | 2011 | 2012 |
| CHANGES IN SPENDING SUBJECT TO APPROPRIATION | | | | | |
| Office of High-Performance Green Buildings: | | | | | |
| Authorization Level | 4 | 4 | 4 | 4 | 4 |
| Estimated Outlays | 4 | 4 | 4 | 4 | 4 |
| Healthy High-Performance Schools: | | | | | |
| Estimated Authorization Level | 2 | 2 | 2 | 2 | 2 |
| Estimated Outlays | 2 | 2 | 2 | 2 | 2 |
| Demonstration Project: | | | | | |
| Estimated Authorization Level | 2 | 2 | 2 | 2 | 2 |
| Estimated Outlays | 2 | 2 | 2 | 2 | 2 |
| Total Changes: | | | | | |
| Estimated Authorization Level | 8 | 8 | 8 | 8 | 8 |
| Estimated Outlays | 7 | 8 | 8 | 8 | 8 |

Basis of estimate: For this estimate, CBO assumes that S. 506 will be enacted near the start of fiscal year 2008 and that amounts authorized will be appropriated beginning in 2008. Estimates of outlays are based on historical spending patterns for similar programs. S. 506 would authorize the appropriation of $40 million over the 2008–2012 period. Those amounts would be used to make

federal buildings more energy efficient, develop green buildings, and provide environmental grants to schools.

*Office of High-Performance Green Buildings*

Title I would authorize the appropriation of $4 million annually over the 2008–2012 period to establish an Office of High-Performance Green Buildings within the General Services Administration to coordinate and promote green building technologies within the federal government. The office would identify green building standards, conduct research, outreach programs, and coordinate budget and procurement issues. Assuming appropriation of the authorized amounts, CBO estimates that the office activities would cost about $20 million over the 2008–2012 period.

*Healthy High-Performance Schools*

Title II would authorize the appropriation of $10 million over the 2008–2012 period for the Environmental Protection Agency (EPA) to award grants to states to assist schools in addressing environmental issues. In addition, the EPA would be required to develop voluntary guidelines for environmental hazards in schools. CBO expects that $2 million would be provided each year over the 2008–2012 period. Appropriation of the authorized amount in such increments would result in discretionary spending of $10 million over the five-year period.

*Demonstration Project*

Title IV would authorize the appropriation of $10 million over the 2008–2012 period to the Office of High-Performance Green Buildings to fund three demonstration projects at existing or proposed federal buildings for use as research tools for green building technologies. CBO expects that $2 million would be provided each year over the 2008–2012 period. Assuming appropriation of the authorized amount in such increments, CBO estimates that the projects would cost $10 million over the five-year period.

Intergovernmental and private-sector impact: S. 506 contains no intergovernmental or private-sector mandates as defined in UMRA. The bill would authorize the appropriation of $10 million in grants to build environmentally friendly schools and to remedy environmental problems at current schools. Any costs to state, local, or tribal governments would result from complying with conditions of federal assistance.

Estimate prepared by: Federal costs: Matthew Pickford and Susanne S. Mehlman; Impact on state, local, and tribal governments: Elizabeth Cove; Impact on the private sector: Craig Cammarata.

Estimate approved by: Peter H. Fontaine, Deputy Assistant Director for Budget Analysis.

## CHANGES IN EXISTING LAW

Section 12 of rule XXVI of the Standing Rules of the Senate requires the committee to publish changes in existing law made by the bill as reported. Passage of this bill will make no changes to existing law.

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